

Significance Now of Maintenance Management

ROY E. JORGENSEN
President
Roy Jorgensen Associates, Inc.

MAINTENANCE MANAGEMENT VIEWED NEGATIVELY AND POSITIVELY

There are two ways of looking at this subject.

On one hand, it might be viewed in a negative sense. There are:

Expanding needs for maintenance

Continuing inflation

Reduced highway revenues

Shortages related to energy.

These elements all indicate that maintenance managers will be severely taxed to get their jobs done. Requirements will be greater. Resources may be reduced.

On the other hand, we might take a positive and optimistic view, based on new management systems effectively implemented in about 12 states and Canadian provinces and about 50 cities and counties. These are providing:

Higher levels of maintenance without increasing costs,

Specific dollar savings,

Uniformity throughout the road and street system.

HOW NEW MAINTENANCE MANAGEMENT SYSTEMS ARE DIFFERENT

Traditionally, highway administrators have had the view point that most highway maintenance is unpredictable; that the best we can do is organize and staff based on some general criteria of road miles or lane miles and then respond to maintenance needs as they develop.

Under this approach, individual superintendents must make daily decisions on work assignments based on their judgments and interpretations of levels of service to be provided. Inevitably, there are wide variations in the emphasis on particular items of work, methods and procedures, productivity and cost.

Top level management of the highway agency has had no basis for evaluating performance or for establishing programs and budgets, except to forecast the trend of past expenditures.

The new system for maintenance management, in contrast, is predicated on the following positive concepts:

Most maintenance operations are predictable and can be planned and scheduled so as to assure performance of all necessary work.

By consistently using standard work methods and procedures, productivity can be increased and manpower can be used much more effectively.

Work performance can be controlled through techniques for formal work authorization and work reporting.

Improved planning, scheduling and manpower utilization permit greater amounts of resources to be directed to highway betterments and improvements that normally could not have been accomplished.

STATEMENTS BY HIGHWAY ADMINISTRATORS

As an indication of the highway manager reaction to the introduction of the new system, there are quoted hereafter statements from state and county officials.

Charles E. Wiles, County Engineer, Genesee County, Michigan¹

"Gone forever are the sporadic spurts of questionable activity on the wrong road during the wrong part of the season because someone had to find work in order to keep his crews busy."

Henry Helland, Director, Utah State Highway Department²

"Levels of Maintenance—Prior to the implementation of the system, considerable variations in the levels of maintenance that were being provided existed between each of our six districts and among the maintenance stations within the districts.

We had never established, documented and communicated our desired levels of service. This standardization process was an important part of the system design phase and has resulted in uniform statewide levels of maintenance service."

"Program Submission. . . . Because our maintenance budget is now based upon the men, equipment and materials, required to

¹ Presentation at Eleventh Annual Management and Research Conference, National Association of County Engineers, March 4, 1971.

² *Highway Research Record No. 347, 1971.*

provide approved levels of maintenance service to our road system, the department is in a position to fully explain requested funds to the legislative committees. The impacts on our maintenance budget of additional road mileage or increased service levels are specifically identified."

F. E. Crawford, Assistant Road Maintenance Engineer, Louisiana Department of Highways.³

"Productivity Soars. Man-hour rates have steadily improved since the Department's Management System was overhauled. The number of man-hours spent on a job has declined for nearly every maintenance task."

Dave Haase, Maintenance Engineer, Oakland County, Michigan.⁴

"For repetitive routine maintenance conducted on a regularly scheduled basis, all work crews will perform the same type of maintenance in the prescribed standard manner."

Barry Rowley, Maintenance Management Engineer, Manitoba Department of Public Works and Highways.⁵

"The greater uniformity has been achieved by giving positive direction to maintenance supervisors regarding the maintenance levels desired. Uniformity in service was greatly assisted by the firm commitment the department made to establish reasonable levels of service and ensure adherence to them."

ANNUAL REPORT, 1970, Michigan State Highway Commission.

"The Department's Maintenance Division expects to save at least \$1 million a year. . . . A tightened, streamlined scheduling and work report system . . . is enabling the department to make more efficient use of its maintenance forces."

William N. Price, State Highway Engineer, Arizona Highway Department.

"Since initiating the Arizona Maintenance Management Research and Development Study Project in June 1970 and the resultant Performance—Controlled System (PeCoS), the Arizona highway system has been increased by over 500 lane miles without adding additional maintenance personnel. In the past, it was customary

³ *Civil Engineering-ASCE*, August 1971.

⁴ Michigan Annual County Engineers Conference, 1971.

⁵ Presentation at 24th Annual Conference of the Western Association of Canadian Highway Officials, April 1971.

for a district engineer to request an additional maintenance employee for each additional 16 lane miles of added roadway. Budget requests for the next fiscal year (1972-73) for the first time in history shows a decrease in position requests even though additional responsibilities are scheduled."

Commissioner Robert F. Smith, Tennessee Department of Highways.⁶

"Each of you has heard me talk many times about the department's new Maintenance Management Improvement Program. Even though this program has been implemented throughout the state, we are constantly striving to further refine and optimize the system to take full advantage of all available resources. With the experience gained in operating the system during the past months, we have projected our needs for manpower, equipment and materials for fiscal 1973 based upon work performance standards to provide a desired level of service."

* * * * *

"As a result of this review and analysis, the department's budget request for fiscal 1973 reflects a substantial decrease in the number of employees. In the area of Highway Maintenance and Marking, for example, I expect to effect a reduction in personnel in the neighborhood of 450 employees. I am convinced that this action can be accomplished and that we can effectively and efficiently carry out our program with such a reduction."

INDIANA TO DEVELOP NEW MAINTENANCE MANAGEMENT SYSTEM

At this time my firm is engaged by the Indiana Highway Commission to assist in developing its maintenance management system on the new pattern. The schedule for development of the system and training of personnel is geared to implementation starting November 1 of this year.

While I would not at this point in time predict specifically the results which Indiana may realize from the new system, I am confident the pay off will be very significant, just as it has been in other agencies.

⁶ Presentation to Legislative Committees (1971).